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Attention: EXAMINER RUDY ZERVIGNON
Phone: (571) 272-1442

TC 1700 PERSONNEL: THE DOCUMENT TO FOLLOW IS A

RESPONSE AFTER FINAL

including:

- [ ] Response under 37 CFR §1.116
- [ ] Notice of Appeal
- [ ] Appeal Brief under 37 CFR §1.192 (filed in triplicate)
- [X] Reply Brief under 37 CFR §1.193(b)(1) (filed in triplicate)
- [ ] Request for Continued Examination (RCE) Transmittal
- [ ] Other: _____

for filing in **U.S. Patent Application Serial No. 09/624,810**

SPECIAL STATUS

CERTIFICATE OF FACSIMILE TRANSMISSION
I hereby certify that this paper is being facsimile transmitted to the Patent and Trademark Office on the date shown below.

Gary M. Hartman — November 29, 2004 (Date)

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PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application No.	:	09/624,810	Confirmation No. **6522**
Applicant	:	Robert W. Bruce et al.	
Filed:	:	July 24, 2000	
TC/Art Unit:	:	1763	
Examiner	:	Rudy Zervigon	
Docket No.	:	13DV-13228	
Customer No.	:	30952	

REPLY BRIEF UNDER 37 CFR §1.193(b)(1)

Commissioner for Patents
P.O. Box 1450
Alexandria VA 22313-1450

This is a Reply Brief to the Examiner's Answer dated November 1, 2004, which was filed in response to Appellants' Appeal Brief filed August 23, 2004.

Appellants' appeal is directed to claims 1-10 of the above-identified patent application.

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The clarifications/issues presented below are in response to statements made in the Examiner's "Response to Argument" (Section 11) in the Examiner's Answer.

At the bottom of Page 4, the Examiner's Answer acknowledges that Dietrich does not disclose a limitation in independent claim 1 (and independent claim 6), in that Dietrich's electron beams 17 and 18 do not have a higher intensity at the interface of the surface 9 of the molten bath 8 with the crucible 6 than at a central region of the bath surface 9. Consequently, in order to meet this limitation, the Examiner states at the top of Page 5 that "Dietrich's intensity profile (38) would have to be skewed over the entire diameter of the molten bath 8, and thus represent broader electron beams." The Answer then argues that "[t]he Examiner has repeatedly given evidence, found in Dietrich's disclosure, that Dietrich's electron beam control elements are capable of the intended use of Dietrich's apparatus" (top of Page 5 of the Answer), which the Examiner states is "a constant evaporation rate" obtained by "a constant temperature of the coating material (molten bath)" (middle of Page 8 of the Answer).

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Examiner cite) any basis for concluding that either the comparator 60 or the steering systems 12 and 13 are configured - programmed, mechanically constructed, etc. - to steer the radial deflection of the electron beam guns 10 and 11 to the extent necessary to project the beams 17 and 18 onto the interface between the molten bath 8 and the crucible 6. Therefore, drawing the conclusion that Dietrich's comparator 60 or steering systems 12 and 13 are configured to be physically capable of doing so is, at best, purely speculative, and at worst contrary to Dietrich's teachings that

> In electron beam melting units, it is important that the electron beam does not strike beside the material to be melted.
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elsewhere at the perimeter of the beam pattern.

The Examiner concludes that Dietrich discloses this limitation because Dietrich's "beam pattern [has] a lower intensity at the proximal and distal points (before maxima at 39/40) than elsewhere at the perimeter of the beam pattern." Top of Page 9 of the Answer. However, nothing in Dietrich discloses or suggests the intensities of Dietrich's beam patterns 26 and 27 at the proximal and distal points (generally, 41 and 42) are lower than elsewhere at the perimeter of the beam patterns 26 and 27. Instead, it would appear that the intensities of the beams 17 and 18 at their perimeters are constant (except for the discontinuities between points 30-31 and 32-33, in which case the intensities at the proximal and distal points 41 and 42 are clearly higher).

The remaining arguments made in the Answer are limited to the 35 USC §103 rejection of claims 5 and 8. Therefore, the Answer appears to omit any arguments directed toward the 35 USC §102 rejection of dependent claims 9 and 10.

Application No. 09/624,810
Docket No. 13DV-13228
Appeal Brief dated November 29, 2004
Response to Final Rejection of March 24, 2004

Closing

Appellants again respectfully request that this Honorable Board reverse the Examiner's final rejections of claims 1-10 under 35 USC §§102 and 103.

Respectfully submitted,

By
Gary M. Hartman
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November 29, 2004
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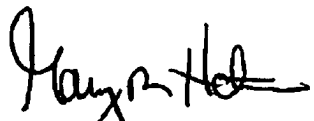
By 
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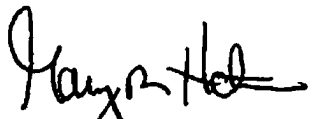
By 
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